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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,590	02/17/2004	Bo Su Chen	H0005285(1139.1156101)	3424

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WORKMAN NYDEGGER  
(F/K/A WORKMAN NYDEGGER & SEELEY)  
60 EAST SOUTH TEMPLE  
1000 EAGLE GATE TOWER  
SALT LAKE CITY, UT 84111

EXAMINER

VANNUCCI, JAMES

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/781,590	CHEN ET AL.	
	Examiner	Art Unit	
	Jim Vannucci	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-20, 22-36, 38 and 39 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 21 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3-4, 7-9, 22-23, 26-27, 29, 34-36 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Kerschner(6,639,203).

Claim 1, figure 5 discloses a light source for providing a light beam(26), a photo detector(20), and an optical lens(170) positioned in the light beam having an input surface(left side) generally facing the light source and an output surface(right side) generally facing away from the light source, and having a reflective surface(112) that covers less than half of the surface area of the input surface of the lens where the reflective surface is adapted to reflect at least a portion of the light beam toward the photo detector.

Claim 3, the reflective surface(112) disclosed in figure 5 is provided on the input surface of the lens(170).

Claim 4, the reflective surface(112) disclosed in figure 5 is a concave surface on the input surface of the lens(170).

Claim 7, figure 5 discloses a light beam(26) that illuminates an illumination pattern on the input surface(left side) of the optical lens(170) that has a central axis(200) and an outer perimeter, and a reflective surface extending from at or near the center axis(200) of the illumination pattern to near the outer perimeter of the illumination pattern.

Claim 8, the reflective surface(112) disclosed in figure 5 is adapted to focus at least part of the reflected light onto the photo detector(20).

Claims 9 and 34, the reflective surface(112) disclosed in figure 5 has a rectangular shaped perimeter(col. 6, lines 64-67).

Claims 13 and 29, the reflective surface(112) disclosed in figure 5 includes a coating of a reflective material.

Claim 22, figure 5 discloses a transmissive part(170) for passing a portion of an incident light beam, and a reflective part(112) for reflecting a portion of the incident light beam that is substantially non-transmissive.

Claim 23, figure 5 discloses a lens with a first lens surface(left side) and an opposing second lens surface(right side) where the reflective part(112) covers less than half of the surface area of the first lens surface.

Claim 26, the reflective part(112) disclosed in figure 5 is integral with the lens.

Claim 27, the reflective part(112) disclosed in figure 5 is concave, and a portion of the transmissive part on the output surface is convex.

Claim 35, figure 5 discloses providing a lens(170) that has a first major surface(left surface) and a second major surface(right surface), and coating less than all of the first major surface with a reflective coating(112).

Claim 36, the reflective coating(112) disclosed in figure 5 is substantially non-transmissive.

Claim 39, the reflective coating(112) disclosed in figure 5 is deposited.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 15-20 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerschner in view of Lederer et al.(6,330,057).

Kerschner does not disclose a controller.

Claim 2, figure 3B of Lederer discloses a controller(54) coupled to a photo detector(52) and a light source(32) receiving a signal from the photo detector that is indicative of the amount of light detected by the photo detector so the controller can provide a control signal to the light source that adjusts the power of the light source so that the signal from the photo detector is relatively constant(col. 23, lines 18-29).

Claim 15, the light source(32) and photo detector(52) disclosed in Lederer are positioned adjacent to one another. Kerschner discloses an optical lens that is spaced from both the light source and photo detector.

Claim 18, the light source disclosed in Lederer can include a vertical cavity surface emitting laser.

Claim 19, the light source(32) disclosed in figure 3B of Lederer is a light emitting diode.

Claim 20, the photo detector(52) disclosed in figure 3B of Lederer is a photodiode.

Claim 16, figure 8 of Lederer discloses an optical lens(206) adapted to couple a light beam from the light source(202) into the optical fiber(212).

Claims 17 and 24-25, Kerschner discloses that the reflective surface may extend the entire length of the lens(col. 6, lines 64-67). If it does not extend the entire length of the lens, which is a possible and an obvious geometry given the disclosure, the reflective surface disclosed in figure 5 would cover less than 25% of the lens surface and also reflect less than 25% of the power in the light beam that is provided by the light source.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the above elements disclosed in Lederer in the device disclosed in Kerschner for control of the laser as disclosed in Lederer.

5. Claims 10-12, 14 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerschner in view of Lederer as applied above, and further in view of Mast(3,825,322).

Kerschner and Lederer do not disclose a non-strip shaped reflector.

Claims 10 and 32, figure 2 of Mast discloses a reflective surface(12) that has a circular shaped perimeter to allow transmission through a portion of the lens(31).

Claims 11 and 33, a reflective surface that has an oval shaped perimeter would be obvious given the strip shape reflector disclosed in Kerschner and the annular shape reflector disclosed in Mast.

Claims 12 and 31, the reflective surface(12) disclosed in figure 2 of Mast has an annular shaped perimeter surrounding an at least partially transmissive surface of the lens(31).

Claims 14 and 30, the coatings disclosed in Kerschner and Mast can include a noble metal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the reflector shapes disclosed in Mast in the device disclosed in Kerschner and Lederer to permit transmission through the lens as disclosed in Mast.

6. Claims 28 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerschner in view of Moss et al.(5,084,711).

Kerschner does not disclose an aspheric lens surface.

Claim 28, Moss discloses a lens that has an aspheric surface with a reflective part that can be molded into the aspheric lens surface.

Claim 38, Moss discloses a lens made from a material that is commonly molded.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an aspheric lens as disclosed in Moss in the device disclosed in Kerschner to minimize transmission losses as disclosed in Moss(col. 2, lines 56-62).

***Allowable Subject Matter***

7. Claims 5-6, 21 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter.

The following limitations are primarily responsible for distinguishing these claims over the prior art.

Regarding claims 5-6, the limitations concerning the input surface of the lens being generally convex except for the concave reflective surface.

Regarding claim 21, the limitations concerning the light source having a numerical aperture that is dependent upon one or more operating conditions, the reflective surface being configured to reflect a relatively constant percent of the power of the light beam provided by the light source over a range of numerical apertures of the light beam.



Regarding claim 37, the limitations concerning the first major surface being convex with a flat or concave portion, and the coating step coats the flat or concave portion with the reflective coating.

***Correspondence***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jim Vannucci whose phone number is (571) 272-1820.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (571) 273-8300.

  
James Vannucci